

**PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Safety and Enforcement Division  
Rail Transit Safety Branch

Resolution ST-184  
September 29, 2016

**RESOLUTION**

**RESOLUTION ST-184 GRANTING SAN FRANCISCO BAY AREA RAPID  
TRANSIT DISTRICT A VARIANCE FROM GENERAL ORDER 95,  
SECTIONS 79.4 (A) AND (B) FENCING DESIGN**

**SUMMARY**

This resolution grants San Francisco Bay Area Rapid Transit District's request for a variance to General Order 95, Section No. 79.4 (A) and (B) fencing requirements for its Warm Springs Extension Project to provide fencing that better matches the aesthetics of the planned surrounding environment. Specifically, San Francisco Bay Area Rapid Transit District requests approval for the option to install alternative architectural fencing adjacent to its guideway at the site of the Warm Springs/South Fremont Station with equivalent or greater protection to that specified in General Order 95.

**PROJECT DESCRIPTION**

The San Francisco Bay Area Rapid Transit District (BART) Warm Springs Extension Project (WSX) is a 5.4-mile extension of the BART rail-fixed guideway system continuing the existing guideway to the south of the existing Fremont Station. The project includes construction of aerial and at-grade right-of-way, as well as a subway tunnel under Fremont Central Park and Lake Elizabeth, and terminates at the new Warm Springs/South Fremont Station, which will serve as the tie-in point for BART's Silicon Valley/Berryessa Extension project simultaneously under construction in cooperation with Santa Clara Valley Transportation Authority. The WSX Project is currently under construction and scheduled to open for revenue service in mid- to late 2016. The Commission approved the Safety and Security Certification Plan for this project through Resolution ST-80.

## **BACKGROUND**

BART operates an electric rail-fixed rapid transit system through four counties in the San Francisco Bay Area, with current projects underway to expand into a fifth county. Electric power is supplied to BART cars through third-rail conductors, which provide 1000 volts direct current (VDC) to each car for traction power, train control, and passenger amenities. General Order 95 (GO) establishes safety requirements for rail properties utilizing third-rail power, including fencing specifications.

BART requested a variance to GO 95, Section 79.4 (A) and (B) to install unique architectural fencing for the Warm Springs Extension Project by letter dated January 19, 2016. The request seeks installation of alternative ornamental fencing adjacent to the BART guideway at and near Warm Springs/South Fremont Station rather than the exact configuration specified in GO 95. BART's request letter and attachments are included in Appendix A.

The proposed fencing is described as "panelized woven steel mesh" with 1.5-inch square openings. In addition to the woven mesh, the fence will feature 3-1/2 inch square hollow steel section supports opposite the guideway side, extending vertically from the concrete wall and spanning horizontally between the vertical supports. See Drawing A631-A and A631-B attached to BART's request for variance for a typical fence section, included in Appendix A. The architectural fencing is to be used only on the east side of the guideway, where patron parking and transit connections are publicly accessible. In the area south of the station, adjacent to the tail track and train-operator access walkway, approximately 910 feet of the architectural fencing will incorporate 3-strand barbed wire extensions as specified in Section 79.4.B of GO 95. The barbed wire will be absent from approximately 730 feet of fencing directly in front of the station, where the guideway and exterior station areas are to be well-illuminated and monitored by BART station agents, video surveillance, and frequent BART Police Department patrols. See Drawings C192 and C193 in Appendix A for the precise limits of both configurations of the architectural fencing. Fencing installed elsewhere on the project will conform to the General Order.

**GO 95, Overhead Electric Line Construction, Section 79.4 Fencing:****A. At Ground Level**

*Third rail construction or reconstruction shall not be permitted at ground level unless the rights-of-way, easement or other property upon which the same is located is entirely fenced. Fence construction shall be designed, installed and maintained in such manner as to deny access over, under or through the fencing to all but authorized persons.*

**B. Material and Height**

*Fencing material shall be of galvanized steel, woven mesh or links (commonly known as chain-link or cyclone fencing), extending from ground level to a minimum height of seven feet. Above said 7 foot height, there shall be installed an inclined extension of not less than 12 inches, to which shall be attached no fewer than three strands of barbed wire, with said extension being inclined 45° away from the fenced facilities wherever possible.*

**Description of Fencing from BART's Request for Variance:**

*Architectural Fence Features:*

- *Framing: 16-gage steel, mitered corners, welded, galvanized, painted;*
- *Wire Mesh: panelized woven steel mesh (10-gage wire), lockcrimp, with square pattern and 1-1/2" openings, galvanized and painted;*
- *Barbed wire: 3 strands of PVC coated barbed wire in grey [only along the tail track south of the station];*
- *Extension arms: 12" galvanized metal, inclined at 45° and painted to match fence frame [only along the tail track south of the station];*
- *Stem wall: reinforced concrete, 12" thick with 2" chamfers and a 12-gage galvanized sheet metal flashing mounted to the top on the public side to prevent the wall ledge from being used as a foothold.*

*Refer to following attachments from BART's request for variance:*

- *Drawings X061 and X062 show the general plan of the WSX Project.*
- *Sketch of the overall layout of the Warm Springs/South Fremont Station Site.*
- *Drawings C192 and C193 show the location and limits of the alternative fencing.*
- *Drawings A631-A and A631-B show a typical elevations and cross sections of the alternative fencing.*

**DISCUSSION**

BART submitted a draft request for variance for this project to the Commission's Rail Transit Safety Branch (RTSB) in July of 2015; however, RTSB Staff found the

justification presented in the request unsatisfactory and recommended certain changes. BART then opted to withdraw the request and planned to install 3-strand barbed wire throughout. However, after reviewing the revised plan, RTSB Staff determined that the architectural fencing with the inclusion of horizontal square steel section members did not meet the requirements of GO 95, and a variance would be necessary. BART and Staff agreed that by requesting a variance, BART would conform to CPUC's requirements and be able to forego the installation of barbed wire directly in front of the Warm Springs/South Fremont Station, where its safety and security benefits are provided by other measures including lighting and surveillance. The final fence configurations as submitted in the request were analyzed by CPUC Staff. Its design addresses all of Staff's concerns, and the submitted configuration will achieve the following:

- Deny access as required by GO 95, Section 79.4A.
- Provide an equivalent or greater level of safety and security for the BART guideway as is required by GO 95, Section 79.4B.
- Provide a pleasing environment for patrons using the BART Warm Springs/South Fremont Station.

Staff has reviewed BART's request and the proposed fencing design in the context of the existing General Order requirements and believes that granting the variance will not have an adverse effect on system safety or security.

### **NOTICE**

On August 30, 2016, BART's variance request was published on the Commission's Daily Calendar.

### **COMMENTS**

The draft resolution of the RTSB in this matter was mailed in accordance with Section 311 of the Public Utilities Code and Rule 14.2(c) of the Commission's Rules of Practice and Procedure. No comments were received.

### **FINDINGS**

1. BART requested by letter, dated January 19, 2016, a permanent variance to the fencing design requirement required by GO 95, Section 79.4 (A) and (B)

for the east side of the guideway at and south of the newly constructed Warm Springs/South Fremont Station.

2. BART proposes to install a new 7-foot high fence constructed of 3-1/2 inch square hollow steel section members supporting panelized woven steel mesh of 10-gage wire with 1-1/2 inch openings in a square pattern.
3. GO 95 Section 79.4 A and B fencing requirements will be closely achieved using an equivalent or greater level of protection and a design agreed to by BART and RTSB.
4. Approximately 730 feet of fencing directly in front of the Warm Springs/South Fremont Station will not have the “three strands of barbed wire, with said extension being inclined 45° away from the fenced facilities,” but equivalent protection will be provided by an alternative architectural fencing, lighting and surveillance measures.
5. Approximately 910 feet of fencing to the south of the Warm Springs/South Fremont Station will incorporate the “three strands of barbed wire, with said extension being include 45° away from the fenced facilities” atop an alternative architectural fencing configuration.
6. BART and RTSB are in agreement that the proposed fence will have equivalent or greater protection to that specified in GO 95 and, will not significantly impact public safety or security.

**THEREFORE, IT IS ORDERED THAT:**

1. The Bay Area Rapid Transit District’s request for a variance to General Order 95, Sections 79.4 (A) and (B), fencing requirements for their Warm Springs Extension Project to provide fencing that better matches the aesthetics of the planned surrounding environment is granted.
2. This resolution is effective today.

I certify that this resolution was adopted by the Public Utilities Commission at its regular meeting held on September 29, 2016. The following Commissioners voting favorably thereon:

/s/ TIMOTHY J. SULLIVAN  
TIMOTHY J. SULLIVAN  
Executive Director

MICHAEL PICKER  
President  
MICHEL PETER FLORIO  
CATHERINE J.K. SANDOVAL  
LIANE M. RANDOLPH  
Commissioners

Commissioner Carla J. Peterman being necessarily absent, did not participate.

APPENDIX A